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GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER	
THEXTON, MATTHEW	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/757,849	FINKELSHTAIN ET AL.	
	Examiner	Art Unit	
	Matthew A. Thexton	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *three sheets*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 2005 December 22 was filed after the mailing date of the first Office action on 2005 September 28. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The "Other Documents" citation numbered "4" has been lined through because the left hand side of page A604 and the right hand side of page A605 are clipped rendering the document unreadable.

The "Other Documents" citation numbered "5" has been lined through because it is not in English.

Text of Title 35 USC not Cited

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification

The disclosure is objected to because of the following informalities: Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract is objected to for the presence of the concluding sentence. Applicant avers (page 3, third paragraph, response filed 2005 December 28) (1) they are not aware of any provision which prohibits the inclusion in the abstract that points out the non-limiting nature of the abstract, and (2) that all that an abstract is required to be is a concise statement of the technical disclosure of the patent application. In response to (1) it is noted that 37 CFR 1.72 states in pertinent part "The purpose of the abstract is to enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure." This it taken to mean that extraneous matter is to be avoided as such is contrary to the goal of "determine quickly" and in this instance the objected to sentence is entirely extraneous since case law already states for the proposition expressed. Furthermore, the sentence is legal phraseology because "invention" is that for which is sought the legal fiction of patent, as expressed in pertinent part of 37 CFR 1.75(a) "The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention...." In response to (2) it is noted that the objected to sentence does not refer to the technical disclosure of the patent application and thus fails Applicant's characterization, and that it fails the requirement that the abstract be concise by exceeding the ambit defined by 37 CFR 1.72 noted hereinabove. Appropriate correction is required.

The disclosure is objected to because of the following informalities: The information referencing the copending patent application on page 14 requires updating.

Appropriate correction is required.

Claims Version

The listing of claims submitted originally has been examined.

Claims Analysis

Claim 1 is directed to "storage-stable liquid concentrate for use with a fuel cell" comprising:

(a) at least on metal hydride compound;

(b) a solvent comprising one or more polar solvent components; and

(c) at least on hydroxide ion providing compound;

wherein after 4 weeks at about 25C not more than 2% of the hydride compound(s) have decomposed.

Claims 2-27 depend directly or indirectly from claim 1 and specify or further limit: the type of hydride; the concentration of the hydroxide ion; the concentration of the hydride; the type of hydroxide; the type of solvent(s); the substantial absence of stability affecting additives, adverse or otherwise; the time and amounts of decomposition. Although claim 18 employs "consist essentially of" this is negated later in the claim by "comprises" and "at least one of," hence it is interpreted as "comprising."

Claim 69 depends from claim 1 and is directed to "method of reducing the decomposition of a fuel...during storage...comprises storing the fuel as concentrate of claim 1 and diluting...only before using the fuel in the fuel cell."

Although weight has been given to the intended use, these claims are interpreted as directed to mixtures of the three components.

Independent claim 28 is directed to processes "for preparing a metal hydride containing liquid for use in a fuel cell" comprising:

(1) combining:

(a) a concentrate comprising:

(i) at least one metal hydride;

(ii) a polar solvent; and

(iii) hydroxide ion concentration of at least about 7 moles per liter;

(iv) wherein after 4 weeks at about 25C not more than 2% of the hydride compound(s) have decomposed; and

(b) a solvent in an amount of at least bout 15 volume % of the concentrate.

Claims 29-38 depend directly or indirectly from claim 28 and specify or further limit: the resulting hydroxide ion concentration; the amount of decomposition; the amount of hydride in the concentrate; the amount of hydroxide in the concentrate; the

type of hydride; the type of hydroxide compound; the type of solvent; the relative amounts of hydroxide and hydride in the concentrate.

Independent claim 39 is directed to processes "for providing a storage-stable packaged metal hydride containing liquid for use with a fuel cell" comprising:

(a) providing a container having at least a first and second compartments;

(b) partially or completely filling the first with a concentrate comprising:

(i) at least one metal hydride compound;

(ii) a first portion of a polar solvent; and

(iii) having at least about 8 moles per liter of hydroxide ion; and

(c) partially or completely filling the at least one second compartment with at least one second portion of the polar solvent; and

wherein the combination of the compartment contents produces a liquid having a hydroxide ion concentration not higher than about 7 moles per liter.

Claims 40-47 depend directly or indirectly from claim 39 and specify or further limit: the combination hydroxide ion concentration; the amount of decomposition; the amount of hydride in the concentrate; the typed of hydride; the type of hydroxide compound; the relative amounts of hydroxide and hydride in the concentrate; the container allows mixing of the compartments components inside it.

Claim 48 depends from claim 39 and is directed to a liquid "which is obtainable by the process of claim 39."

Independent claim 49 is directed to container "filled with a metal hydride containing liquid" comprising:

(a) a first compartment containing a concentrate comprising:

(i) at least one metal hydride compound;

(ii) a polar solvent; and

(iii) having a hydroxide ion concentration of at least about 8 moles per liter; and

(b) at least one second compartment containing a solvent;

wherein the combination of the compartments contents produces a liquid having a hydroxide ion concentration not higher than about 7 moles per liter.

Claims 50-60 depend directly or indirectly from claim 49 and specify or further limit: the container is sealed and allows mixing of the compartments contents; the presence of "instructions;" the presence of an internal partition; the at least partial surrounding of one compartment by another; the hydroxide ion concentration in the liquid; the amount of hydride in the concentrate; the type of hydride; the type of solvent; the type of hydroxide compound; the relative amounts of hydroxide and hydride in the concentrate.

Claim 61 depends from claim 49 and is directed to a "refilling device for a liquid fuel cell" comprising the container of claim 49.

Claim 62 depends from claim 61 and further requires design which permits accommodating a spent liquid from a liquid fuel cell.

Independent claim 63 is directed to packaged combination "for providing a metal hydride containing liquid for sue with a fuel cell" comprising:

(a) a first container containing a concentrate comprising:

(i) at least one metal hydride compound;

(ii) a polar solvent; and

(iii) having a hydroxide ion concentration of at least about 8 moles per liter; and

(b) at least one second container containing a solvent;

wherein the combination of the containers contents produces a liquid having a hydroxide ion concentration not higher than about 7 moles per liter.

Claims 64-68 depend directly or indirectly from claim 63 and specify or further limit: the presence of "instructions;" the type of hydride; the type of solvent; the type of hydroxide compound; the presence of at least one additive for the fuel in the at least one second container; the type of additive.

Claim Objections

Claim 18 objected to because of the following informalities: The term "consist" appears to be properly "consists." Appropriate correction is required.

Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim recites properties which are inherent to the subject matter of the claim from which it depends. If this is incorrect, Applicant may refute by identifying subject matter of claim 1 which is not encompassed by claim 2.

Claim 52 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim recites a property which is inherent to the subject matter of the claim from which it depends. If this is incorrect, Applicant may refute by identifying subject matter of claim 49 which is not encompassed by claim 52.

Claim 61 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim recites a property which is inherent to the subject matter of the claim from which it depends. If

this is incorrect, Applicant may refute by identifying subject matter of claim 49 which is not encompassed by claim 61.

Claim 62 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim recites a property which is inherent to the subject matter of the claim from which it depends. If this is incorrect, Applicant may refute by identifying subject matter of claim 49 which is not encompassed by claim 62.

Claim Rejections - 35 USC § 112

Claims 18, 19, 24, 26, and 48-62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 is directed to a concentrate which consists essentially of (a) at least one member selected from 5 listed hydrides; (b) solvent which "comprises" water; and (c) at least one of NaOH or KOH; and has a hydroxide ion concentration of at least about 8 moles per liter. The use of "consist essentially of" followed by limitations of components defined in terms of "comprises" and "at least one of NaOH and KOH" is indefinite. Claim 19 depends from claim 18 and claim 26 depends from claim 19.

Claim 24 recites "wherein the concentrate is substantially free of stabilizers for the at least one metal hydride compound." This contradicts the understanding that the hydroxide is a stabilizer for the hydride.

Claim 48 is directed to a "storage-stable packaged metal hydride containing liquid which is obtainable by the process of claim 39." The liquid is the mixture of the concentrate and the solvent, hence to 'obtain' it there must be a mixing step, which claim 39 lacks. In fact, claim 39 is directed to the separately packaged concentrate and solvent, therefore its premise would be destroyed by a claim to the liquid, per se. Further, "obtainable" is indefinite. Further, the liquid, per se, is prior art fuel cell fuel; thus if the claim is rewritten to clearly and definitely encompass the liquid, per se, it will be subject to rejection under 35 USC 102 since one could not distinguish the liquids of the prior art and the liquids produced by mixing the concentrate and solvent of the present claim 39.

Claim 49 recites "a container filled with a metal hydride containing liquid" but the rest of the claim defines two other liquids, the concentrate and the solvent. Therefore, it is inconsistent to recite "a...liquid" in the container. Claim 51-62 depend from claim 49.

Claims 50 and 51 recite the limitation "the at least one second component" in line 2. There is insufficient antecedent basis for this limitation in these claims.

Claims 50 and 51 recite the limitation "the polar solvent" in line 2. There is insufficient antecedent basis for this limitation in these claim.

Claim 52 recites "an internal partition which defines." It is not understood how an internal partition, i.e., the common wall, could define both the first compartment and the

at lest one second compartment other than to the extent of its partition quality. How does the claim mean any more than "an internal partition which is an internal partition?"

35 USC § 102 and 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections

Claims 1-38 and 69 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Finkelshtain et al. (US 2002/0083640A1).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '640 discloses fuel mixtures for fuel cells comprising "a surface active compound" and hydride such a NaBH4 and an electrolyte such as KOH. The concentration of KOH may be 2 to 12 M (paragraph 0040, and claim 10). It is stated the hydride solutions are unstable in acid or neutral conditions but stable in basic (paragraphs 0017 to 0020). It would be immediately envisaged by one of ordinary skill in the art at the time of the invention to create the basic solution to obtain the stability noted, thus arriving at claims 1-27. '640 further notes that 6M KOH is the preferred concentration, although stability and solubility are factors to take into account for exact composition of the fuel (paragraph 0040), hence it would be immediately envisaged that the disclosed stability objective is a function of basicity and mere dilution to 6M would obtain the noted preference, as required by claims 28-38 and 69.

In the event the reference is deemed to be of not sufficient specificity to sustain a conclusion of anticipation, then it is concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have varied the degree of basicity as suggested to obtain a desired level of stability, whether storing it in the laboratory or in commerce, it would be apparent that longer storage is desirable and obtainable by the expedient suggested. Accordingly, having obtained the obvious concentrate for storage property, it would have been obvious to one of ordinary skill in the art at the time of the invention to dilute for use, as it is suggested to employ 6M concentration (paragraph 0040), as required by claims 28-38 and 69.

Claims 39-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finkelshtain et al. (US 2002/0083640A1).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '640 is discussed in the statement of rejection immediately hereinabove. It is concluded that '640 either causes the ordinary artisan to immediately envisage the employment of, or to be motivated by suggestion to employ, the expedient of increasing the basicity to obtain a desired level of stability, and further to dilute such mixture to obtain the suggested 6M concentration in use.

It would have been obvious to one of ordinary skill in the art at the time of the invention to "package" or "container" the obvious or anticipated storage stable concentrate with the necessary solvent for obtaining the acknowledge optimal 6M fuel

mixture because: (1) such avoids problems of dosing the proper amounts of the two components by the end user; (2) such avoids problems of dosing with impure solvent. The packages and containers forming a part of the claims are well known in the prior art and Applicant has not represented them as per se novel, accordingly Official notice is taken of these particulars.

Claims 1-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finkelshtain et al. (US 2002/0083640A1) in view of Smotkin (US 5846669).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '640 is discussed in the two statements of rejection immediately hereinabove.

'669 notes that the optimum concentration of hydroxide at ambient temperature is about 6N (or 6M), but that at higher operating temperatures higher concentrations are indicated (column 1, lines 46-57). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed concentrations of 7M, 8M, and so on up to 12M depending on the intended use, and it would have been obvious to one of ordinary skill in the art at the time of the invention to have diluted existing fuel mixtures if an alternative lower operating temperature was desired.

Claims 1-38 and 69 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jung et al. (US 3511710).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

'710 discloses a mixture of saturated NaBH4 in 8N NaOH (example 1). The storage-stability limitation of Applicant's claims would be inherent. '710 further provides suggestions on variations (column 3, lines 4-11 and 34-41) of hydride and hydroxide concentrations.

In the event the reference is deemed to be of not sufficient specificity to sustain a conclusion of anticipation by not suggesting that the 8N solution could be diluted, then it is concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed concentrations anywhere within the ranges suggested and to have made less concentrated ones from more concentrated ones as an obvious expedient.

Claims 1-38 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jung et al. (US 3511710) in view of Smotkin (US 5846669).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '710 is discussed in the statement of rejection immediately hereinabove.

'669 notes that the optimum concentration of hydroxide at ambient temperature is about 6N (or 6M), but that at higher operating temperatures higher concentrations are indicated (column 1, lines 46-57). Thus, it would have been obvious to one of ordinary

skill in the art at the time of the invention to have employed concentrations of 7M, 8M, and so on up to 12M depending on the intended use, and it would have been obvious to one of ordinary skill in the art at the time of the invention to have diluted existing fuel mixtures if an alternative lower operating temperature was desired.

Claims 1-8, 10-15, 17-19, and 24-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dipling (DE 3238963, as understood from Applicant supplied abstract; a translation has been requested and will be forwarded when available).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The abstract discloses solutions of 0.01 to 1 weight % hydride such as NaBH4 (e.g., example 9) and 1 to 30 weight % NaOH or KOH in solution with C1 to C6 aliphatic alcohol, and that such is storage stable. This rejection is made over 35 USC 102 in the event that the translation supports such conclusion.

In the event the reference is deemed to be of not sufficient specificity to sustain a conclusion of anticipation, then it is concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have followed the plain suggestions of ranges of components (e.g., the abstract) and thus to arrive at subject matter encompassed by Applicant's claims.

Claims 1-6, 10-16, 24, and 25 are rejected under 35 U.S.C. 102(a) and (e) as being clearly anticipated by Lumsden et al. (US 2003/0108832A1).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

See example 1. See paragraph 0009 for statement of suitability for fuel cell use.

Claims 1-6, 10-16, 24, and 25 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Tsang (US 6818334B2).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

See solution A, e.g., Table III, 15 weight % NaOH is thought to be about 3.7M.

Claims 1-6, 10-16, 24, and 25 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Tsang (EP 1369947A2).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

See solution A, e.g., Table III, 15 weight % NaOH is thought to be about 3.7M.

Claims 1-8, 10-15, 17-19, 24, and 25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Suda (US 2002/0015869A1).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

See example 1; 30 weight % KOH is thought to be about 7.5M, which is "about" 8M, and 2 weight % KBH4 is thought to be about 0.4M.

Claims 9, 16, 20-23, 26-38, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda (US 2002/0015869A1) as applied to claims 1-8, 10-15, 17-19, 24, and 25 above, and further in view of Suda (US 2002/0015869A1).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

'869 is discussed in the statement of rejection immediately hereinabove. '869 further suggests the hydride be used in the range of 0.1 to 50 weight % (paragraph 0050). It would have been obvious to one of ordinary skill in the art at the time of the invention to follow the plain suggestion in '869 to vary the amounts of components and thus arrive at subject matter encompassed by Applicant's claims. Further, it is concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed concentrations anywhere within the ranges suggested and to have made less concentrated ones from more concentrated ones as an obvious expedient, thus arriving at claims 28-38 and 69.

Claims 1-38 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda (US 2002/0015869A1) in view of Smotkin (US 5846669).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '869 is discussed in the two statements of rejection immediately hereinabove.

'669 notes that the optimum concentration of hydroxide at ambient temperature is about 6N (or 6M), but that at higher operating temperatures higher concentrations are indicated (column 1, lines 46-57). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed concentrations of 7M, 8M, and so on up to 12M depending on the intended use, and it would have been obvious to one of ordinary skill in the art at the time of the invention to have diluted existing fuel mixtures if an alternative lower operating temperature was desired.

Claims 1-6, 10-16, 24, and 25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kojima et al. (JP 2002-201001A, as evidenced by JPO machine translation).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

See example, Table, and paragraph 0033; over 100 hours with zero hydrogen generation.

Claims 1-28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sanglet (US 4788041).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

'041 discloses BOROL, and closely related mixtures comprising 10-15 weight % NaBH4 (about 2.6 to 3.9M) and 35-45 weight % NaOH (about 7.5 to 10M) and water (column 3, lines 54-59). Usefulness as fuel in a fuel cell is inherent.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bockris et al., cited by Applicant, discloses employing a concentrated hydrazine in storage and diluted to 0.5M by combining with 7M KOH electrolyte at time of use (page 593, third full paragraph).

Fuel Cell Systems, (Eds. Blomen & Mugerwa), cited by Applicant, provides background on title technology. At page 92 it is noted that KOH is preferred over NaOH because the accidental contamination by CO2 results in adverse precipitation of formed sodium bicarbonate.

Citation of Pertinent Other Art

Derwent abstract ACC-NO: 2005-239003 (KR 2004098121A), discloses a two compartment fuel tank, one side having boron hydride and NaOH, the other water, which are mixed after storing when use is desired.

Response to Arguments

Applicant's arguments, see page 2, second paragraph of response, filed 2005 December 28, with respect to the objection to the abstract use of the terms "comprises" and "comprising" have been fully considered and are persuasive. The objection has been withdrawn.

Applicant's arguments, see page 4 of response, filed 2005 December 28, with respect to rejection under 35 USC 112, second paragraph have been fully considered and are persuasive. The rejection of claims 1-38, 41, 43, 46, and 47 has been withdrawn.

Applicant's arguments, see pages 4-10 of response, filed 2005 December 28, with respect to rejection under 35 USC 103 over Amendola '973 have been fully considered and are persuasive. The rejection of claims 1-69 has been withdrawn.

As noted, Applicant's most of arguments are persuasive. Therefore, the noted rejection have been withdrawn. However, upon further consideration, new ground(s) of rejection have been made.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Tuesday-Friday, 9:30 to 7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on 571-272-1119. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Matthew A. Thexton
Primary Examiner
Art Unit 1714
matthew.thexton@uspto.gov